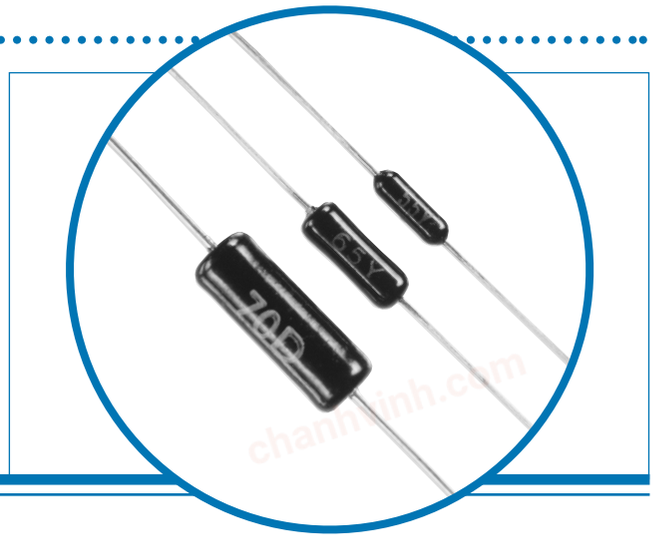
chanhvinh.com

Precision Metal Film Resistors

TT electronics
Welwyn Components

RC series

- **CECC released products with low TCRs over a wide resistance range**
- **Resistance tolerance down to 0.05%**
- **Express delivery available**
- **Low noise and negligible voltage coefficient**



Electrical Data

		RC55	RC65	RC70	Notes
Commercial					
Power rating at 70°C	watts	0.25	0.5	1.0	
Resistance range	ohms	1R to 4M	1R to 4M	1R to 10M	
Limiting element voltage	volts	350	350	500	
Isolation voltage	volts	500	500	700	
TCR (20 to +70°C) & codes	ppm/°C	5(V), 10(T), 15(Y), 25(D), 50(C) & 100(Z)			See resistance
Resistance tolerance	%	0.05(W), 0.1(B), 0.25(C), 0.5(D) & 1(F)			restrictions

Approved CECC 40101-004		**H**	**J**	**K**	**K**	**L**	
Power rating at 70°C	watts	0.063	0.125	0.25	0.25	0.5	
Resistance range	ohms	1R to 1M	1R to 1M	1R to 1M	10R to 1M	10R to 1M	
Limiting element voltage	volts	200	200	250	250	350	
Isolation voltage	volts	280	280	350	350	500	
TCR & codes	ppm/°C	15(Y), 25(D), 50(C) & 100(Z)					See resistance
Resistance tolerance (code)	%	0.05(W), 0.1(B), 0.25(C), 0.5(D) & 1(F)					restrictions

Approved CECC 40101-804		**A**	**B**	**B**	**C**	
Power rating at 70°C	watts	0.125	0.25	0.25	0.5	
Resistance range	ohms	1R to 1M	1R to 1M	10R to 1M	10R to 1M	
Limiting element voltage	volts	200	250	250	350	
Isolation voltage	volts	280	350	350	500	
TCR & codes	ppm/°C	15(T), 25(E) & 50(C)				See resistance
Resistance tolerance (code)	%	0.05(W), 0.1(B), 0.25(C), 0.5(D) & 1(F)				restrictions

Standard values		E24, E96 preferred			Any value
Thermal impedance	°C/watt	110	70	60	to order
Ambient temperature range	°C	-55 to +155			

General Note
Welwyn Components reserves the right to make changes in product specification without notice or liability.
All information is subject to Welwyn's own data and is considered accurate at time of going to print.

© Welwyn Components Limited · Bedlington, Northumberland NE22 7AA, UK
Telephone: +44 (0) 1670 822181 · Facsimile: +44 (0) 1670 829465 · Email: info@welwyn-tt.com · Website: www.welwyn-tt.com

Welwyn
A subsidiary of
TT electronics plc

Issue B · 03.02

chanhvinh.com

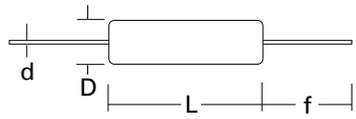
Precision Metal Film Resistors

RC series

TT electronics
Welwyn Components

Physical Data

Dimensions (mm) & Weight (g)							
Type	L max	D max	f min	d nom	PCB mounting centres	Min. Bend Radius	Wt. nom
RC55	7.2	2.5	30	0.6	10.2	0.6	0.24
RC65	10.0	3.7	30	0.6	12.7	0.6	0.40
RC70	15.5	5.5	30	0.8	18.4	1.2	1.15



Construction

A metal film is deposited onto a high quality ceramic former. Nickel-plated steel caps are force fitted to the former and termination wires are welded to the caps.

The resistor is adjusted to value by a helical cut in the film and the body is protected with a specially formulated epoxy coating.

Terminations

Material Solder coated copper wire

Strength The terminations meet the requirements of IEC 68.2.21.

Solderability The terminations meet the requirements of IEC 115-1, Clause 4.17.3.2.

Marking

Type reference, TCR code, resistance value and tolerance code.

The resistance values conform to IEC 62.

Solvent Resistance

The body protection and marking are resistant to all normal industrial cleaning solvents suitable for printed circuits.

Performance Data

		CECC 40101-004	CECC 40101-804	*Actual Performance	
		Requirements	Requirements	Maximum	Typical
Load at commercial rating: 1000 hours at 70°C	ΔR%			0.3	0.1
Load at CECC rating: 1000 hours at 70°C	ΔR%	0.5	0.5	0.3	0.05
Dry heat: 1000 hours at 155°C	ΔR%	0.5	0.5	**1.0	0.15
Shelf life: 12 months at room temperature	ΔR%	Not specified	Not specified	0.1	0.03
Derating from rated power at 70°C		Zero at 155°C	50% at 125°C		
Short term overload	ΔR%	0.1	0.1	0.1	0.02
Climatic	ΔR%	0.5	0.5	0.3	0.1
Climatic category		55/155/56	55/125/56	55/155/56	
Long term damp heat	ΔR%	0.5	0.5	0.5	0.1
Temperature rapid change	ΔR%	0.1	0.1	**0.2	0.05
Resistance to solder heat	ΔR%	0.1	0.1	0.06	0.03
Vibration and bump	ΔR%	0.1	0.1	0.06	0.02
Noise (in a decade of frequency)	μV/V	Not specified	Not specified	1.0	0.1
Voltage coefficient of resistance	ppm/V	Not specified	Not specified		<1

Note: *An 0.01 ohm addition to be added to the performance claims of all resistors <10R.
** All products within the specified approved range meet CECC requirements.

© Welwyn Components Limited Bedlington, Northumberland NE22 7AA, UK
Telephone: +44 (0) 1670 822181 · Facsimile: +44 (0) 1670 829465 · Email: info@welwyn-tt.com · Website: www.welwyn-tt.com

chanhvinh.com

Precision Metal Film Resistors

RC series

TT electronics
Welwyn Components

Table of Resistance Restrictions

TCR	Tolerance								
	RC55			RC65			RC70		
ppm/°C	0.05%	.1 – .25%	.5 – 1%	0.05%	.1 – .25%	.5 – 1%	0.05%	.1 – .25%	.5 – 1%
5	10 to 500k	10 to 500k	1 to 500k	10 to 500k	10 to 500k	1 to 500k	10 to 750k	10 to 750k	1 to 750k
10	10 to 1M	10 to 1M	1 to 1M	10 to 1M	10 to 1M	1 to 1M	10 to 1M	10 to 1M	1 to 1M
15	10 to 1M	5 to 1M	1 to 1M	10 to 1M	5 to 1M	1 to 1M	10 to 1M	10 to 2M	1 to 2M
25	10 to 1M	5 to 2M	1 to 2M	10 to 1M	5 to 2M	1 to 2M	10 to 1M	10 to 5M	1 to 5M
50	10 to 1M	5 to 2M	1 to 4M	10 to 1M	5 to 2M	1 to 4M	10 to 1M	5 to 10M	1 to 10M
100	10 to 1M	1 to 2M	1 to 4M	10 to 1M	1 to 2M	1 to 4M	10 to 1M	1 to 10M	1 to 10M

Application Notes

Matched Sets and Networks

Welwyn has many years experience in the supply of matched set of precision resistors.

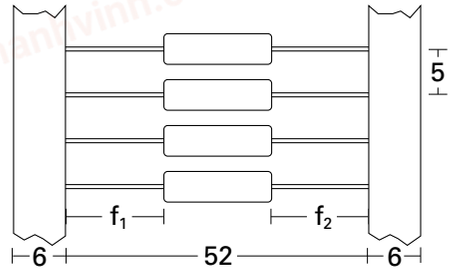
Resistors can be supplied matched for tolerance and TCR down to ±0.02% and ±2ppm/°C, either as separate resistors or pre-assembled and encapsulated within a plastic box.

The individual resistors within a set or module can be manufactured with a tolerance of ±0.05% and TCR of ±5ppm/°C.

A low inductance version is available at 1% tolerance. For low inductance version add suffix N.

Packaging

The standard method of packaging RC55 resistors is taped in ammo packs. Taped resistors on reel or loose packed components can also be supplied by special request. The standard packaging for RC65 and RC70 resistors is loose in boxes. By special request the RC65 components can also be supplied taped on reel or in ammo pack. In the case of tape packed components the usable lead length is reduced by the width of the tape.



Body location $f_1 - f_2 \leq 1.4$ mm

Standard Quantities Per Package

Type	RC55	RC65	RC70
Small box	250	125	25
Large box	1000	500	250
Reel	5000	2500	-
Large ammo pack	1000	1000	-

© Welwyn Components Limited Bedlington, Northumberland NE22 7AA, UK
Telephone: +44 (0) 1670 822181 · Facsimile: +44 (0) 1670 829465 · Email: info@welwyn-tt.com · Website: www.welwyn-tt.com